



VITAMIN CONTENT IN FOOD SUPPLEMENTS: ARE WE GETTING WHAT WE NEED?

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INTRODUCTION

The increased health and wellness concerns and the easy accessibility of products reinforced the **growth of dietary supplements consumption**. Consumers have the general misperception that “vitamin” denotes something harmless, disregarding its potentially harmful effects, but despite its beneficial outcomes, excess intake of vitamins is not innocuous.^{1,2}

Vit	Adverse effects ³
Liposoluble	A Vision changes, dizziness, headaches, nausea, mouth ulcers, liver and kidney damage, osteoporosis, birth defects ...
	D Anorexia, weight loss, polyuria, vascular and tissue calcification, cardiovascular disorders ...
	E Hemorrhage, > risk of prostate cancer...
	K Dangerous interaction with anticoagulants...
Water-Soluble	B Weakness, headache, cardiac problems (B ₁), allergic reactions (B ₃ , B ₁₂), GI disorders (B ₃ , B ₅), neuropathy (B ₆ , B ₉) ...
	C Diarrhea, nausea, abdominal cramps...

AIM

To evaluate if **vitamins daily dose indicated on food supplements (FS) labels** are in conformity with the **Recommended Daily Allowances (RDA)** defined by European Union Directive.⁴

METHODOLOGY

- **150 FS** sold in Portuguese pharmacies, supermarkets, health shops and on internet.
- *Selection criteria*: oral solid pharmaceutical forms for adults, containing vitB, as stated in the label, regardless of the purpose of the FS.
- Label assessment for the daily dose of **vitA, complex B, C, D₃, E and K** and comparison with the respective RDA.

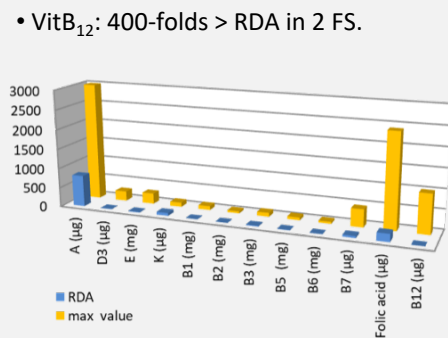
RESULTS

- More than 50% FS presented label daily doses of **vitB complex, D₃ and E** above RDA.

- Some FS labels recommended a daily dose of **vitA, B₆ and D₃ ≥ UL**.⁵

	Vit	RDA	UL	N	FS>RDA	FS>UL
Liposoluble	A (μg)	800	3000	62	19 (31%)	3 (5%)
	D₃ (μg)	5	100	121	82 (68%)	7 (6%)
	E (mg)	12	300	74	45 (61%)	0
	K (μg)	75	ND	21	6 (29%)	-
Water-Soluble	B₁ Thiamin (mg)	1.1	ND	69	50 (72%)	-
	B₂ Riboflavin (mg)	1.4	ND	68	53 (78%)	-
	B₃ Niacin (mg)	16	ND	57	38 (67%)	-
	B₅ Pantothenic acid (mg)	6	ND	56	33 (59%)	-
	B₆ Pyridoxine (mg)	1.4	25	76	61 (80%)	4 (5%)
	B₇ Biotin (μg)	50	ND	43	23 (53%)	-
	B₉ Folic acid (μg)	200	ND	56	35 (63%)	-
	B₁₂ (μg)	2.5	ND	76	48 (63%)	-
	C (mg)	80	ND	84	39 (46%)	-

ND: not defined; UL: Tolerable Upper Intake Level



CONCLUSIONS

- For most vitamins, **the majority of FS presented doses above defined RDA**.
- Although reports of toxic events due to vitamins are scarce, it is crucial that the **daily doses present in FS are reviewed** ensuring the safety of these products.
- Authors also consider that FS should be under the same **quality control** of pharmaceuticals **safeguarding the health of their consumers**.